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the short internodes, narrowly linear to filiform, rigid, scarcely  $\frac{1}{16}$ ' wide, acute, deeply resinous-punctate, the margins revolute; branches alternate; upper leaves reduced to subulate bracts; inflorescence, involucre bracts, and achenium as in the typical form.

Upper division of the coast pine belt. Dale Co. Dr. Eugene A. Smith. August, 1890.

#### KUHNTIA KUHNTIA (Gaertn.)

*Critonia Kuhntia* Gaert. Fr. & Sem. 2: 411. 1788-91.

*Kuhntia Critonia* Willd. Sp. Pl. 3: 1773. 1804.

*Kuhntia paniculata* Cass. Dict. 24: 516. 1821.

*Kuhntia eupatorioides* var. *gracilis* T. & G. Fl. N. A. 2: 78. 1841.

Dry pine barrens. Springhill. September-October. Frequent.

#### CHONDROPHORA VIRGATA (Nutt.)

*Chrysocoma virgata* Nutt. Gen. 2: 137. 1818.

*Bigelovia nudata* var. *virgata* T. & G. Fl. N. A. 2: 232. 1841.

*Chondrophora nudata virgata* Britt. Mem. Torr. Bot. Club, 5: 317. 1894.

Allied to *C. nudata* by the inflorescence and other floral characters, but widely differing in the habit of growth, habitat, distribution and foliage.

The stout sprouts of the multicapitate rootstock are covered with the soft, filiform leaves, forming dense tufts; leaves of the flowering stalk filiform, 1'-1½' long, more or less distant. In the specimens from Alabama and others from western Louisiana no tendency towards the development of a wider leaf blade could be observed; on a specimen from western Texas a few linear-spatulate leaves were found, scarcely  $\frac{1}{8}$ ' wide.

Mountain region. Rocky banks of Little River on Lookout Mountain, DeKalb Co. altitude 1,600 ft. September. Texas, western Louisiana.

### New Species of Fungi imperfecti from Alabama.

By F. S. EARLE.

During the past year Dr. Underwood and I have been preparing a preliminary list of the fungi of Alabama, which it is

hoped to publish at an early day, as a bulletin of the Alabama Experiment Station. During the course of the work a number of species have been found that seem to be undescribed. As the Experiment Station Bulletins do not have a sufficiently wide circulation among botanists to justify their use as a medium for publishing new species, I give below descriptions of some Fungi Imperfecti which appear to be new. Type specimens\* are deposited in the herbaria of the Alabama Polytechnic Institute, the Agricultural Department at Washington, Harvard University, Columbia University and in the private herbarium of the writer. A number of other seemingly new species have been detected, but publication is withheld for the present for lack of sufficient material, or for further study.

COLLETOTRICHUM JUSSIAEAE n. sp.

On orbicular, yellowish-white, arid, purple-bordered spots, 2-10 mm. in diameter; acervuli scattered, not erumpent, small, about 100  $\mu$ ; setae few, brown, transparent, occasionally septate, obtuse, mostly straight, from a somewhat enlarged base, about 70-100x6-8  $\mu$ .

On living leaves of *Jussiaea decurrens*, Auburn, Ala., August 27, 1891. G. F. Atkinson.

CYLINDROSPORIUM CELTIDIS n. sp.

Spots small, yellowish, indefinite and indistinct; acervuli hypophyllous, scattered, often only one on a spot, yellowish brown; spores cylindric or clavate, guttate, at length obscurely several septate, 20-25x3  $\mu$ .

On living leaves of *Celtis Mississippiensis*, Montgomery, Ala. November 10, 1891. G. F. Atkinson.

This somewhat closely resembles *Cylindrosporium ulmicolum* E. & E., on *Ulmus*, but the spores are only half as long.

DIPLODIA MACROSPORA n. sp.

Perithecia scattered, large, carbonaceous, buried, ostiole erumpent, elevating and rupturing the epidermis; spores very long, dark fuliginous, irregularly clavate, on short slender hyaline ba-

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\*It seems useless among the fungi to attempt to distinguish between types and duplicate types. The descriptions have always been drawn from an examination of all the available material and this has been divided into as many "type specimens" as the quantity justified.

sidia, unequally uniseptate, scarcely constricted, each cell often biguttate, oozing out and blackening the epidermis,  $70-80 \times 6-8 \mu$ .

On old weathered cornstalks (*Zea Mays*). Auburn, Ala. Spring of 1896. Underwood & Earle.

This is a very striking species. The long dark spores can be distinctly seen with a hand magnifier scattered over the epidermis. The gross appearance is much like that of *Diplodia Zeae* Lev., but it is easily distinguished by the much larger spores.

#### HETEROSPORIUM SAMBUCI n. sp.

Effused, covering considerable areas with a black velvety tomentum; hyphae long,  $100-200 \mu$ , dark fuscous, erect, often fascicled, branching, septate, nodular, bearing spores pleurogenously at the enlarged nodes; spores oblong, dark fuscous, 3-septate, surface conspicuously roughened by minute tubercles, about  $20-30 \times 5 \mu$ .

On dead and weathered stems of *Sambucus*, Auburn, Ala., March 13, 1896. Underwood & Earle.

#### ISARIOPSIS PILOSA n. sp.

Fascicles, scattered, black, opaque, large,  $400-600 \times 150-200 \mu$  clothed with numerous short fuscous hairs  $4-12 \mu$  long; spores very numerous, acrogenous, crowning the fascicles with a penicillate bundle, light fuscous, transparent, somewhat curved, 12 or more septate, about  $75 \times 3 \mu$ .

On the bark of dead twigs of peach, Auburn, Ala., May 25, 1896. L. M. Underwood.

#### MACROPHOMA DIOSPYRI n. sp.

Thickly scattered over large indeterminate areas; perithecia buried, elevating the epidermis in prominent pustules, at length partially erumpent, surrounded by the ruptured epidermis, large, opening by a distinct ostium, dark brown, of soft cellular structure, reaching  $200 \mu$ ; spores cylindric, sometimes slightly curved, ends abruptly pointed, faintly tinged with olive when seen in mass, contents homogeneous, not guttate nor granular, about  $20 \times 3 \mu$ ; basidia thread-like, shorter than the spores, forming an agglutinated nebulous central mass.

On half-grown fallen fruits of *Diospyros Virginiana*, Auburn, Ala., July, 1896. Underwood & Earle.

#### PESTALOTZIA FLAGELLATA n. sp.

Epiphyllous on large orbicular or irregular brown spots, bordered by a narrow darker brown line; acervuli confined to a defi-

nitely limited central pallid area, usually elongate, seeming to follow the smaller veins, rimosely dehiscent; spores blackening the epidermis, fusoid, 4-septate, not constricted, 3 central cells dark fuscous, end cells hyaline, about  $16 \times 6 \mu$ ; stipe straight, slender, about equalling the spore, the single seta or flagellum bent at an abrupt angle, and prolonged nearly twice the length of the spore, reaching  $28 \mu$ .

On living leaves of *Quercus* sp. (*rubra*?), Auburn, Ala., August and September, 1891. B. M. Duggar.

PHYLLOSTICTA VACCINII n. sp.

Epiphyllous on brown irregular indeterminate spots, 1 cm. or more in diameter; perithecia scattered, erumpent, of soft texture, ostiole large,  $8-10 \mu$ , size variable,  $80-12 \mu$ ; spores large, usually ovate, with a large ( $4 \mu$ ) spherical gutta near the broader end, about  $12 \times 6 \mu$ .

On living leaves of *Vaccinium arboreum*, Auburn, Ala., April 25, 1896. Underwood & Earle.

PROSTHEMIUM PALMATUM n. sp.

Perithecia scattered over large whitened areas, elongate, hysteroid, black, carbonaceous, buried, at length partially erumpent, rupturing irregularly, or becoming discoid by the breaking away of upper portion; spores cylindric, light fuliginous, 1-3 septate, about  $12-15 \times 4 \mu$ , united at base into bundles of 3 to 6, not stellate, but palmate or fascicled; basidia obsolete.

On rotten wood, Auburn, Ala., March 28, 1896. Underwood & Earle.

This genus does not seem to have been reported before from this country. The three known European species agree in the stellate arrangement of the spores in which they differ widely from our species.

SEPTORIA NEGLECTA n. sp.

On irregular determinate angular brownish arid spots, from 1 mm.-2 cm. or more, usually with a darker border; perithecia epiphyllous, or amphigenous, prominently erumpent, irregularly scattered,  $106-120 \mu$  or more; spores thread-like, continuous, faintly guttate,  $30-40 \times 1-1 \frac{1}{2} \mu$ .

On persistent living leaves of *Quercus Phellos* growing as an undershrub, quite common, Auburn, Ala., February, March and April, 1896. Underwood & Earle.

## SPORONEMA CAMELLIAE n. sp.

Epiphyllous on large white brown-bordered spots or areas, 2–5 cm. in diameter; perithecia thickly scattered, buried, elevating the epidermis, orbicular or somewhat elongate, usually rimosely dehiscent, occasionally stellate-laciniate, becoming discoid, of firm cellular texture, about  $200\ \mu$ ; spores cylindric, ends obtusely rounded, sometimes curved, usually bi-guttate,  $12\text{--}18 \times 4\text{--}5\ \mu$ ; basidia short and thick, about equalling the spore, usually simple.

On living leaves of *Camellia Japonica*, Auburn, Ala., March and April, 1896. J. S. Burton.

The spots resemble very closely those caused by *Pestalozzia Guepini* Desm.

## SPORONEMA ILICIS n. sp.

Epiphyllous on large deadened and whitened areas, usually involving the apical portion of the leaf; perithecia often somewhat concentrically arranged, or thickly scattered, large, brown, membranous, buried in the epidermis and coming off with it, usually somewhat elongate, elevating the epidermis and at length cracking it longitudinally or stellately; spores continuous, elliptic, hyaline, on short simple hyaline basidia about  $12\text{--}15 \times 4\text{--}6\ \mu$ .

On languishing leaves of *Ilex opaca*, Auburn, Ala., December, 1895; January, February and March, 1896. Underwood & Earle.

From a fourth to a half of the leaf is usually dead and conspicuously whitened. The living portion is usually bounded by a broad intermediate dark purplish border. The gross appearance is much like *Phyllosticta opaca* E. & E., N. A. F. 3443, but the spores are entirely different.

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## Reinke's Discussions of Lichenology.

BY ALBERT SCHNEIDER.

## III.

## PRELIMINARY CONSIDERATIONS OF A PHYLOGENETIC MORPHOLOGY OF LICHENS.\*

Acharius,† the father of lichenology, classified lichens as a distinct order of plants. This method was not followed by later

\* Reinke, J. Einige Voraussetzungen einer phylogenetischen Morphologie der Flechten. Pringsheim's Jahrbücher, 28: 39–69. 1895.

† Acharius, E. Lichenographia Universalis, Göttingen, 1810.